REMARKS

Claims 1-36 are pending in this application. Claims 1-36 are rejected. No amendment to the claims has been made herein.

Claims 1-12, 15-21, 23-27 and 28-36 are rejected under 35 U.S.C. §102(b) as being anticipated over USPN 3,956,558 to Blanco et al. (Office action paragraph no. 2). **Claims 13, 14 and 22 are rejected under 35 U.S.C. §103(a) as being unpatentable over USPN 3,956,558 to Blanco et al. in view of USPN 4,892,847 to Reinherz.** (Office action paragraph no. 3). The rejection of claims is respectfully traversed.

The claimed invention does not relate to transcription sheets for decoration, i.e. decalcomanias, but relates to decorated ceramic articles themselves. It is important that the order of layers is different between a transcription sheet in a method of wet-transcription (Water mount, Slide off and the like) and a heat-adhesion (heat-release) transcription sheet, however, the order of the layers which are transferred on the surface of a ceramic article must be same.

It is noted that **Blanco' 588** discloses constitution of a decalcomania itself and a preparing method thereof (col. 3, lines 25-26, col. 4, lines 42-46), but does not disclose constitution of a decorated ceramic article as now claimed.

To be sure, **Blanco' 588** describes that the decalcomania usually comprises "a backing sheet, a design layer and a protective of a glass frit" in that order, and if desired, that the decalcomania comprises "the backing sheet and the glass frit" in that order (col. 9, lines 10-13). This however

relates to the constitution of the decalcomania itself and does not at all relate to the constitution of a fired article, onto which the decalcomania has been transferred.

An object of **Blanco' 588** is to prevent release of lead and/or cadmium or other toxic materials present in the design layer by attack of acid or alkali detergent solution, and, for that reason, to form the protective layer of a tin oxide-containing low melting glass of specific composition just on the design layer. Namely, that layers comprises a first inner (undermost) substrate layer of an article, a glaze layer, the design layer and the protective layer of the tin oxide-containing low melting glass frit, in that order. *Only this order can prevent the release of lead or cadmium, which is the object of the* **Blanco' 588** *invention.* If the article would comprise the substrate layer of the article, the glaze layer, the layer of the tin oxide-containing low melting glass frit and the design layer, in that order from the inside as the Office Action stated, the detergent solution would naturally attack from the outside (the surface of the article). Therefore, granted that any layer is deposited on the design layer, it is self evident to provide the above specific glass frit layer does not make sense at all.

As described below, the constitution of the decalcomania itself is described by the disclosure of Col. 4, lines 42-46:

> "... a protective coating in the form of the tin oxide-containing low melting glass is deposited on the design layer. If desired, the low melting glass layer can be initially deposited on the backing sheet and the design layer applied to the glass layer."

In the transcription method of transferring the decalcomania, like this, on the article, there are both

a soluble vanishing layer and a soluble adhesive layer which comprise organic compounds between the backing sheet and the design layer in case of a Water mount Slide Off transcription, as **Blanco' 588** described. Therefore, the initial order of the layers is just maintained since the adhesive layer is directly attached to the glaze layer on the articles. (Design layer/glass frit layer (surface side)→Substrate of article/glaze layer/design layer/glass frit layer (surface side))

As the other transcription method, however, the heat release method has been known. In this case, it is well-known, to one having ordinary skill in the art, that a decalcomania usually comprises a resin film, an organic adhesive layer, a design layer, a glass frit layer functioning as a protective layer, a low melting wax layer and a backing sheet, in that order from a farthest surface of the backing sheet. The heat release decalcomania has been more widely used than the wet method. The method of using such decalcomania, which is known as a heat release transcription method (heat adhesion method), comprises a fist step of sticking the adhesive layer, which is a first outer layer in the decalcomania, onto the glaze layer of the article by heating the decalcomania and a second step of peeling off the backing sheet which no conversely constitutes the surface. In this manner, the laminate structure comprises: substrate of the article/glaze layer/glass frit layer, in that order from the inside. Accordingly, it is possible to accomplish the object of the **Blanco' 588** invention.

Referring to col. 7, lines 11-12, "The low melting glass or frit is prefused prior to application as a protective coating over the design layer", and col. 7, lines 28-31, "An amount of the low melting glass or frit should be deposited on the design layer ...," it is found that the above conclusion is proved.

Carmellini' 841 (USP 3,791,841), in the accompanying IDS, relates not to a high temperature adhesive type of a decalcomania but to a low temperature adhesive type of a decalcomania using a polymer resin. In case where a contrast layer is considered as the glass flux layer, the discussion is essentially the same. Referring to col. 3, line 59 - col. 4, line 34 in **Carmellini' 841**, a difference of the layer order between the slide-off decalcomania and the heat decalcomania, and the resultant same layer order on the article are definitely described. (Note that referring to col. 1, line 15 and col. 9, lines 10-13 in **Blanco' 588** there is a phrase "Dry or Wet". This phrase shows a method of printing the design layer on the backing sheet, and not a Wet/Dry method of transferring the formed decalcomania on the article.)

Also, refer to **Porth' 076** (USP 2,970,076), in the accompanying IDS, as to an invention of the layer order in case of the decalcomania using thermoplastic layer. The enclosed drawing generally illustrates the invention of **Porth'076** and **Blanco' 588** (USP 3,533,822), in the accompanying IDS.

It is important that the order of the design layer of the decalcomania from the backing sheet in the slide-off method is reverse to the order in the heat sticking method.

The Office Action asserts on page 3, text lines 1-3, "Glass transition temperatures of glass and glass flux are inherent features since they depend on the material used. Applicants use the same material as the reference teaches so the glass transition temperature would be expected to be the same." It is a fact described in any textbook of glass that all sorts of physical and chemical

largely depend on the composition ratio even if components of the glass are entirely same.

The melting temperature of the glass frit disclosed by **Blanco' 588** is definitely not the glass transition temperature but a temperature at which, to be exact, the glass starts to flow, and is higher than the softening temperature. (A method of measuring a softening point is well-known, for example, referring to ASTM C338-57.) **Blanco' 588** disclosed 980°F (527°C) and 1250°F (677°C) at col. 6, lines 19-20 and 1000°F (538°C) and 1500°F (816°C) at col. 9, lines 62-63. Therefore, it can be understood that **Blanco' 588** stated the glass as "the low melting frit glass" since 1000°F as the heating temperature of over-glazing is generally low.

On the other hand, the applicable temperature of the present invention is largely different from **Blanco' 588** since the heating temperature of in-glazing in the present invention is about 1220°C-1240°C (2228°F-2264°F) as described in embodiments. Therefore, the glass transition temperature needs to be within the value range of the claimed invention since the heating temperature is sufficiently high. It is not correct, as described above, that the rejection considered that temperature of **Blanco' 588** as the glass transition temperature.

In claim 6 of **Blanco' 588**, it was disclosed that the design layer was made of a mixture of pigment particles and frit particles. **Blanco' 588** described that the frit includes the tin oxide-containing low melting glass frit defined in claim 1, in this case it is optional whether the protective layer of said specific glass frit is formed or not, and further is preferred to form the protective layer. In case where the glass frit and the pigment particles are merely mixed, the definite glass layer

adjacent to the design layer is no more present. In this case, a technical idea of **Blanco' 588** is totally different from the claimed invention.

In view of the aforementioned remarks, claims, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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